



# TORQ Analysis of Hoist and Winch Operators to Crane and Tower Operators

## INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Hoist and Winch Operators	53-7041.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Crane and Tower Operators	53-7021.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

## OUTPUT SECTION:

Grand TORQ:

83

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	88	Level	82	Level	78

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Far Vision	57	18	68	Instructing	54	12	73	Mechanical	67	10	72
Rate Control	53	16	72	Active Listening	67	11	77				
Spatial Orientation	41	16	53	Operation Monitoring	62	8	69				
Near Vision	50	11	59	Equipment Maintenance	72	2	74				
Reaction Time	59	9	72								
Multilimb Coordination	59	8	75								
Selective Attention	48	9	62								
Response Orientation	55	9	62								
Manual Dexterity	46	7	65								
Arm-Hand Steadiness	44	7	62								
Glare Sensitivity	42	8	50								
Control Precision	60	5	78								
Depth Perception	55	5	72								
Flexibility of Closure	39	4	50								
Finger Dexterity	42	3	53								
Auditory Attention	44	3	53								
Speech Clarity	37	3	53								
Deductive Reasoning	37	3	50								



Visual Color Discrimination	37	3	50
Oral Expression	42	1	53
Visualization	42	1	50

LEVEL and IMPT (IMPORTANCE) refer to the Target Crane and Tower Operators. GAP refers to level difference between Hoist and Winch Operators and Crane and Tower Operators.

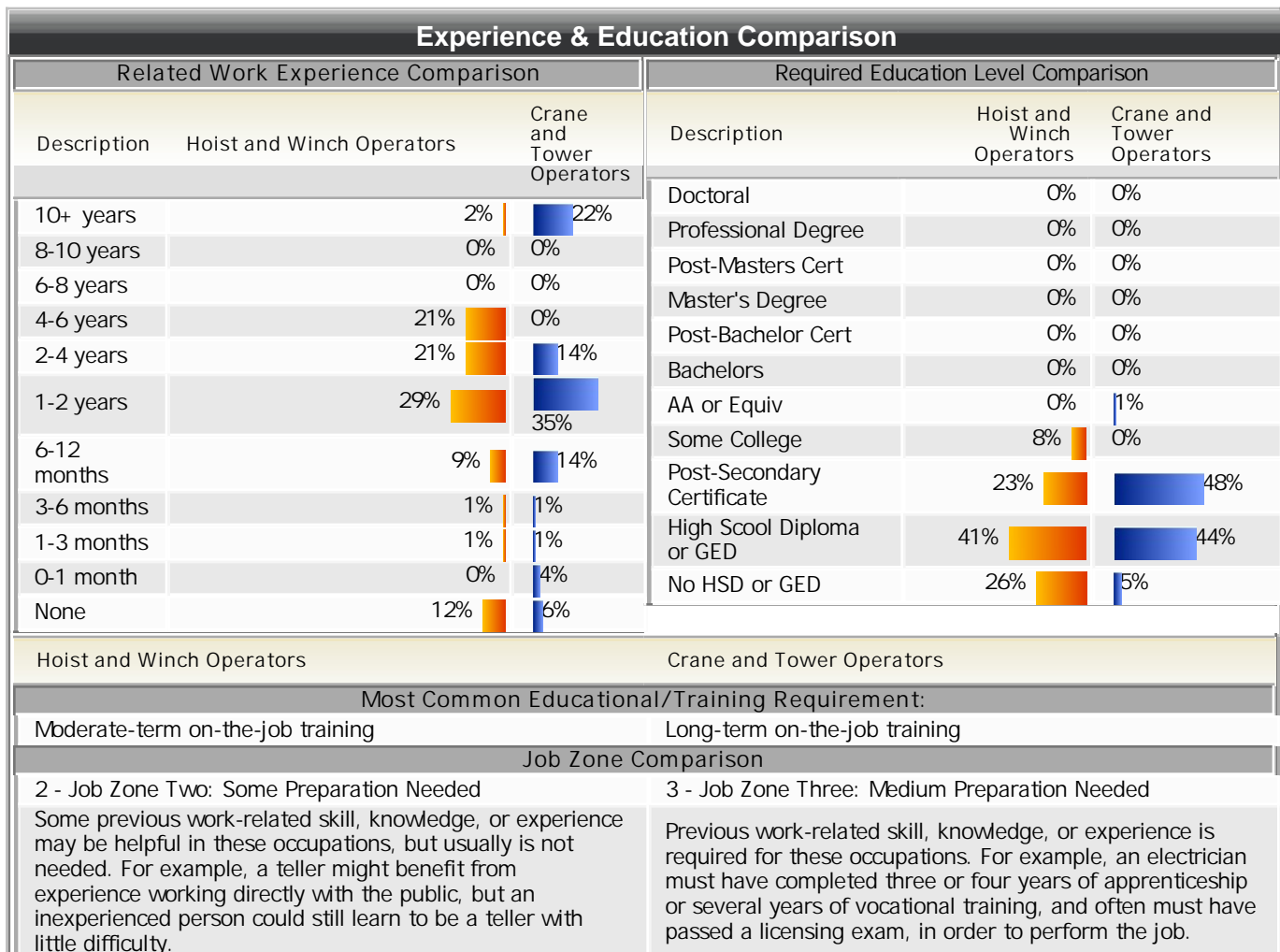
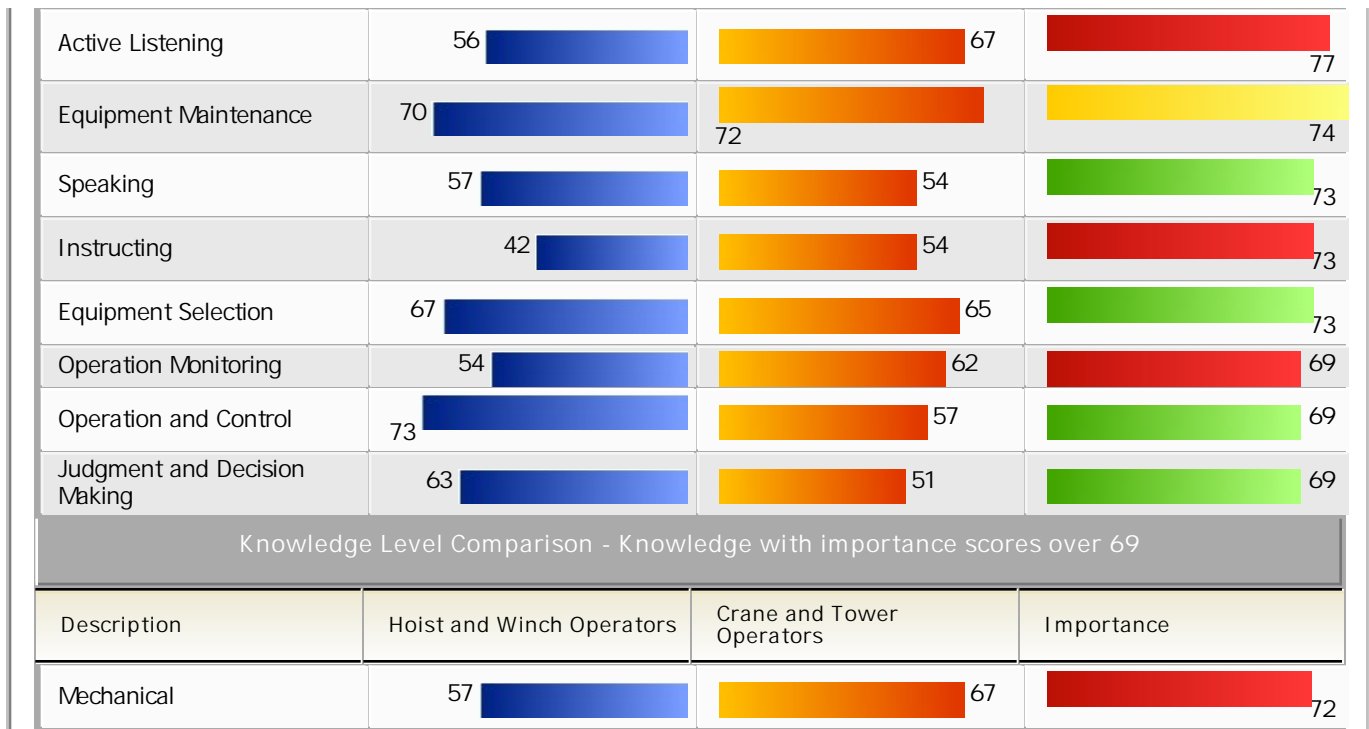
## ASK ANALYSIS

### Ability Level Comparison - Abilities with importance scores over 50

Description	Hoist and Winch Operators	Crane and Tower Operators	Importance
Control Precision	55	60	78
Multilimb Coordination	51	59	75
Rate Control	37	53	72
Reaction Time	50	59	72
Depth Perception	50	55	72
Far Vision	39	57	68
Manual Dexterity	39	46	65
Problem Sensitivity	41	37	62
Selective Attention	39	48	62
Arm-Hand Steadiness	37	44	62
Response Orientation	46	55	62
Near Vision	39	50	59
Oral Comprehension	51	50	53
Oral Expression	41	42	53
Perceptual Speed	48	42	53
Spatial Orientation	25	41	53
Finger Dexterity	39	42	53
Hearing Sensitivity	41	37	53
Auditory Attention	41	44	53
Speech Clarity	34	37	53
Deductive Reasoning	34	37	50
Flexibility of Closure	35	39	50
Visualization	41	42	50
Visual Color Discrimination	34	37	50
Glare Sensitivity	34	42	50
Speech Recognition	35	34	50

### Skill Level Comparison - Abilities with importance scores over 69

Description	Hoist and Winch Operators	Crane and Tower Operators	Importance
-------------	---------------------------	---------------------------	------------





These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

## Tasks

### Hoist and Winch Operators

#### Core Tasks

##### Generalized Work Activities:

- Repairing and Maintaining Mechanical Equipment - Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Operating Vehicles, Mechanized Devices, or Equipment - Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).

#### Specific Tasks

##### Occupation Specific Tasks:

- Apply hand or foot brakes and move levers to lock hoists or winches.
- Attach, fasten, and disconnect cables or lines to loads, materials, and equipment, using hand tools.
- Climb ladders in order to position and setup vehicle-mounted derricks.
- Move levers, pedals, and throttles in order to stop, start, and regulate speeds of hoist or winch drums in response to hand, bell, buzzer, telephone, loud-speaker, or whistle signals, or by observing dial indicators or cable marks.
- Move or reposition hoists, winches, loads and materials, manually or using equipment and machines such as trucks, cars, and hand trucks.
- Observe equipment gauges and indicators and hand signals of other workers in order to verify load positions and/or depths.

### Crane and Tower Operators

#### Core Tasks

##### Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Operating Vehicles, Mechanized Devices, or Equipment - Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

#### Specific Tasks

##### Occupation Specific Tasks:

- Clean, lubricate, and maintain mechanisms such as cables, pulleys, and grappling devices, making repairs as necessary.
- Determine load weights and check them against lifting capacities in order to prevent overload.
- Direct helpers engaged in placing blocking and outrigging under cranes.
- Direct truck drivers backing vehicles into loading bays, and cover, uncover, and secure loads for delivery.
- Inspect and adjust crane mechanisms and lifting accessories in order to prevent malfunctions and damage.
- Inspect bundle packaging for conformance to regulations and customer requirements, and remove and batch packaging tickets.
- Inspect cables and grappling devices for



- Oil winch drums so that cables will wind smoothly.
- Operate compressed air, diesel, electric, gasoline, or steam-driven hoists or winches in order to control movement of cableways, cages, derricks, draglines, loaders, railcars, or skips.
- Repair, maintain, and adjust equipment, using hand tools.
- Select loads or materials according to weight and size specifications.
- Signal and assist other workers loading or unloading materials.
- Start engines of hoists or winches and use levers and pedals to wind or unwind cable on drums.
- Tend auxiliary equipment such as jacks, slings, cables, or stop blocks, in order to facilitate moving items or materials for further processing.

#### Detailed Tasks

##### Detailed Work Activities:

- inspect material moving equipment
- load, unload, or stack containers, materials, or products
- maintain or repair construction machinery or equipment
- operate cargo handling gear
- operate hoist, winch, or hydraulic boom
- operate material moving, loading, or unloading equipment
- perform safety inspections in construction or resource extraction setting
- set up specialized rigging
- use hand or power tools
- use measuring devices in construction or extraction work

wear, and install or replace cables as needed.

- Load and unload bundles from trucks, and move containers to storage bins, using moving equipment.
- Move levers, depress foot pedals, and turn dials to operate cranes, cherry pickers, electromagnets, or other moving equipment for lifting, moving, and placing loads.
- Review daily work and delivery schedules to determine orders, sequences of deliveries, and special loading instructions.
- Weigh bundles, using floor scales, and record weights for company records.

#### Detailed Tasks

##### Detailed Work Activities:

- clean equipment or machinery
- direct and coordinate activities of workers or staff
- examine products or work to verify conformance to specifications
- inspect material moving equipment
- load, unload, or stack containers, materials, or products
- maintain or repair construction machinery or equipment
- maintain production or work records
- measure, weigh, or count products or materials
- operate cargo handling gear
- operate crane in construction, manufacturing or repair setting
- operate earth-moving or other heavy construction equipment
- operate material moving, loading, or unloading equipment
- perform safety inspections in manufacturing or industrial setting
- read work order, instructions, formulas, or processing charts
- set up specialized rigging
- signal directions or warnings to coworkers
- use hand or power tools

#### Tools - Examples

- Adjustable wrenches
- All-terrain cranes
- Anemometers
- Anti-two block devices
- Bench vises
- Hook blocks



- Oxyacetylene torches
- Closed-end wrenches
- Bridge cranes
- Vernier calipers
- Iron balls
- Demolition hammers
- Dragline buckets
- Barrel clamps
- Protective ear muffs
- Protective ear plugs
- Clamshell buckets
- Floor scales
- Load monitoring indicators
- Forklifts
- Safety goggles
- Timber tongs
- Grease guns
- Ball peen hammers
- Survival suits
- Chain falls
- Cab cranes
- Electric impact wrenches
- Hydraulic jacks
- Clamps
- Boom length indicators
- Snips
- Needlenose pliers
- Oilcans
- Open-ended wrenches
- Paint application sprayers
- Drop hammers
- Pneumatic impact wrenches



- Power drills
- Angle grinders
- Tire pressure gauges
- Power washers
- Pry bars
- Drift pins
- Ratchet sets
- Respirators
- Boom angle indicators
- Rough-terrain cranes
- Safety glasses
- Fall arrest harnesses
- Phillips head screwdrivers
- Lifting slings
- Slip-joint pliers
- Spud wrenches
- Measuring tapes
- Wireless touch screen monitors
- Friction cranes
- Crawler cranes
- Excavators
- Turnbuckles
- Two way radios
- Wear gauges
- Face shields
- Comealongs
- Wire brushes
- Wire rope cutters

### Labor Market Comparison

Description	Hoist and Winch Operators	Crane and Tower Operators	Difference



Median Wage	N/A	\$ 41,940	N/A
10th Percentile Wage	N/A	\$ 25,800	N/A
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	N/A	\$ 47,460	N/A
90th Percentile Wage	N/A	\$ 51,410	N/A
Mean Wage	N/A	\$ 39,640	N/A
Total Employment - 2007	N/A	240	N/A
Employment Base - 2016	N/A	247	N/A
Projected Employment - 2016	N/A	243	N/A
Projected Job Growth - 2006-2016	N/A	-1.6 %	N/A
Projected Annual Openings - 2006-2016	N/A	4	N/A

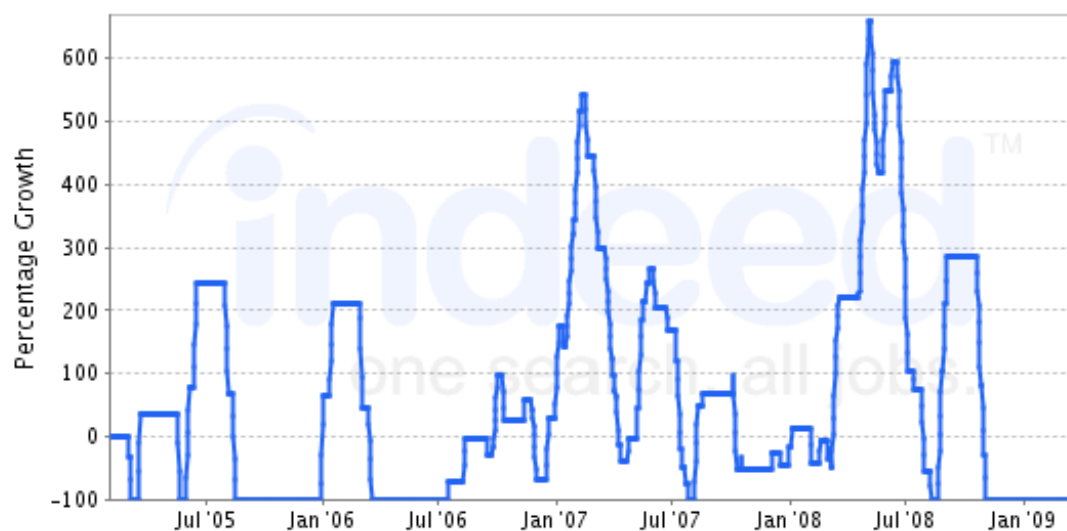
## National Job Posting Trends

Trend for Hoist and Winch Operators

Trend for  
Crane and  
Tower  
Operators

### Job Trends from Indeed.com

— Hoist and Winch Operator — Crane and Tower Operator

Data from [Indeed](http://Indeed.com)

## Recommended Programs

### Construction Equipment Operator

Construction/Heavy Equipment/Earthmoving Equipment Operation. A program that prepares individuals to apply technical knowledge and skills to operate and maintain a variety of heavy equipment, such as a crawler tractors, motor graders and scrapers, shovels, rigging devices, hoists, and jacks. Includes instruction in digging, ditching, sloping, stripping, grading, and backfilling, clearing and excavating.

Institution	Address	City	URL
Wasington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>





## Mobil Crane Operation/Operator

Mobil Crane Operation/Operator. A program that prepares individuals to hoist and swing loads via complex rotating machinery that is driver operated. Includes instruction in crane operational characteristics, load and capacity chart usage, emergency control skills, safety, specific types of mobile cranes and loading devices, applicable codes and standards, and applications to particular types of jobs and loads.

No schools available for the program

## Maine Statewide Promotion Opportunities for Hoist and Winch Operators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
53-7081.00	Refuse and Recyclable Material Collectors	85	2	930	\$22,780.00	\$22,780.00	1%	37
47-2071.00	Paving, Surfacing, and Tamping Equipment Operators	84	2	320	\$25,520.00	\$25,520.00	1%	7
51-7041.00	Sawing Machine Setters, Operators, and Tenders, Wood	84	2	700	\$24,790.00	\$24,790.00	-8%	15
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	84	2	910	\$38,230.00	\$38,230.00	-26%	23
51-4121.06	Welders, Cutters, and Welder Fitters	83	2	1,610	\$38,030.00	\$38,030.00	7%	49
51-9191.00	Cementing and Gluing Machine Operators and Tenders	83	1	80	\$27,620.00	\$27,620.00	-15%	2
47-5021.00	Earth Drillers, Except Oil and Gas	83	3	140	\$37,470.00	\$37,470.00	2%	4
53-7021.00	Crane and Tower Operators	83	3	240	\$41,940.00	\$41,940.00	-2%	4
51-9041.00	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	82	2	260	\$28,330.00	\$28,330.00	-7%	5
53-7032.00	Excavating and Loading Machine and Dragline Operators	82	2	330	\$32,160.00	\$32,160.00	6%	8
37-3011.00	Landscaping and Groundskeeping Workers	82	1	4,040	\$24,450.00	\$24,450.00	12%	130
43-5041.00	Meter Readers, Utilities	82	1	90	\$31,240.00	\$31,240.00	-11%	3



51-7042.00	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	82	2	900	\$23,040.00	\$23,040.00	-12%	23
51-9122.00	Painters, Transportation Equipment	81	2	320	\$32,230.00	\$32,230.00	2%	8
47-4051.00	Highway Maintenance Workers	81	2	2,210	\$28,790.00	\$28,790.00	7%	60

### Top Industries for Crane and Tower Operators

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Other specialty trade contractors	238900	15.22%	7,063	7,806	10.52%
Iron and steel mills and ferroalloy manufacturing	331100	8.16%	3,785	2,548	-32.68%
Support activities for water transportation	488300	6.61%	3,068	3,551	15.76%
Nonresidential building construction	236200	4.32%	2,006	2,248	12.05%
Miscellaneous durable goods merchant wholesalers	423900	4.08%	1,891	2,171	14.80%
Support activities for mining	213100	3.77%	1,749	1,646	-5.93%
Commercial and industrial machinery and equipment rental and leasing	532400	3.64%	1,691	2,066	22.19%
Highway, street, and bridge construction	237300	2.94%	1,366	1,471	7.66%
Warehousing and storage	493100	2.86%	1,326	1,771	33.57%
Steel product manufacturing from purchased steel	331200	2.80%	1,298	1,149	-11.50%
Cement and concrete product manufacturing	327300	2.25%	1,045	1,135	8.55%
Foundries	331500	2.12%	983	713	-27.49%
Metal and mineral (except petroleum) merchant wholesalers	423500	1.77%	822	902	9.82%
Ship and boat building	336600	1.73%	802	898	11.93%
Federal government, excluding postal service	919999	1.51%	702	664	-5.47%

### Top Industries for Hoist and Winch Operators

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Support activities for water transportation	488300	9.78%	295	342	15.75%
Logging	113310	8.08%	244	201	-17.33%
Electric power generation, transmission and distribution	221100	6.64%	200	184	-8.03%



Support activities for road transportation	488400	6.46%	195	214	9.96%
Cement and concrete product manufacturing	327300	4.04%	122	132	8.55%
Sawmills and wood preservation	321100	3.60%	109	87	-19.82%
Support activities for mining	213100	2.85%	86	81	-5.93%
Nonmetallic mineral mining and quarrying	212300	2.04%	62	66	7.34%
Local government, excluding education and hospitals	939300	2.03%	61	69	12.33%